

## Round Lake

### Site Description

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#### Location

Water designation number (WDN)	05-0005-00
Legal description	T119N-R51W-Sec.14
County (ies)	Codington
Location from nearest town	0.75 miles east and 0.25 miles north of South Shore, SD

#### Survey Dates and Sampling Information

Survey dates	July 11, 2013 (FN, GN)
Frame net sets (n)	4
Gill net sets (n)	2

#### Morphometry

Watershed area (acres)	14,920
Surface area (acres)	≈150
Maximum depth (ft)	≈6
Mean depth (ft)	unknown

#### Ownership and Public Access

Round Lake is a meandered lake owned by the State of South Dakota and the fishery is managed by the SDGFP. A single public boat ramp is located on the south shore and is maintained by the SDGFP (Figure 1). Lands adjacent to Round Lake are under ownership of the State of South Dakota and private individuals.

#### Watershed and Land Use

The 14,920 acre Punished Woman Lake sub-watershed (HUC-12) encompasses Round Lake and is located within the larger North Fork Yellow Bank River (HUC-10) watershed. Land use within the watershed is primarily agricultural including a mix of pasture or grassland and cropland.

#### Water Level Observations

No OHWM or outlet elevation was available for Round Lake. The elevation of Round Lake on May 21, 2013 was 1839.8, slightly higher than the fall 2012 elevation of 1839.4 fmsl. On October 7, 2013 the water level had declined to an elevation of 1838.8 fmsl.

#### Fish Management Information

Primary species	Northern Pike, Yellow Perch
Other species	Black Bullhead, Golden Shiner, White Sucker
Lake-specific regulations	none
Management classification	warm-water marginal
Fish consumption advisories	none

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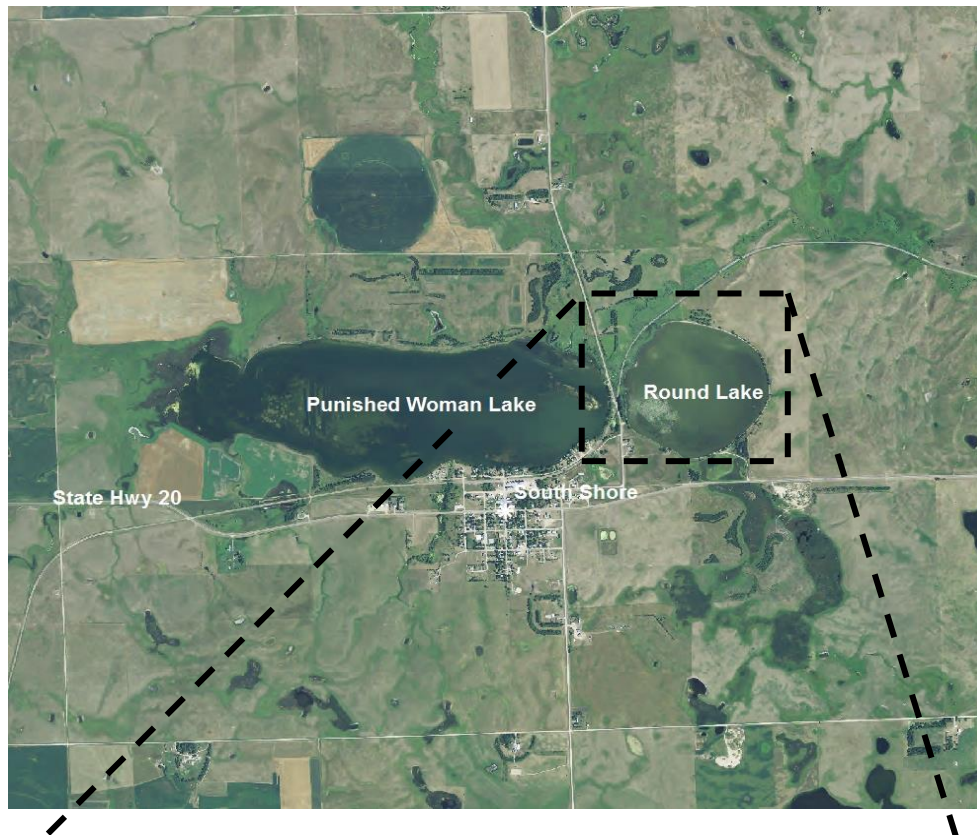


Figure 1. Map depicting geographic location of Punished Woman and Round Lakes from South Shore, South Dakota (top). Also noted is the public access site for Round Lake (bottom).

## Management Objectives

- 1) Maintain a mean gill net CPUE of stock-length Northern Pike  $\geq 3$ , a PSD of 30-60, and a PSD-P of 5-10.
- 2) Maintain a mean gill net CPUE of stock-length Yellow Perch  $\geq 30$ , a PSD of 30-60, and a PSD-P of 5-10.
- 3) Maintain a mean frame net CPUE of stock-length Black Bullhead  $\leq 100$ .

## Results and Discussion

The fish community in Round Lake, which is located east of Punished Woman Lake near the city of South Shore, is rarely surveyed due to its shallow nature. The lake has a maximum depth of  $\approx 6$  ft and a history of partial winterkill events that often result in a fish community comprised of more winterkill tolerant species (e.g., Black Bullhead, Northern Pike). Although Walleye have been stocked in recent years (Table 2), Round Lake is primarily managed as a self-sustaining Northern Pike and Yellow perch fishery.

### *Primary Species*

Northern Pike: Two gill net nights captured eleven Northern Pike that ranged in TL from 30 to 65 cm (11.8 to 25.6 in; Figure 2). The mean gill net CPUE of stock-length Northern Pike was 4.5 (Table 1) and above the minimum objective of ( $\geq 3$  stock-length pike/net night). Currently, relative abundance appears to be high.

Due to the limited netting effort, sample size was low and few inferences can be made concerning the size structure and condition of Northern Pike in Round Lake.

Yellow Perch: Relative abundance appears to be low, as only 13 Yellow Perch that ranged in TL from 8 to 14 cm (3.1 to 5.5 in) were captured in two gill net nights. The majority (12 of 13 individuals) were less than stock-length (13 cm; 5 in). The mean gill net CPUE of stock-length Yellow Perch was 0.5 and well below the minimum objective ( $\geq 30$  stock-length fish/net night).

Given the low sample size, few inferences can be made concerning size structure, growth, and/or condition.

### *Other Species*

Black Bullhead: Black Bullhead populations are typically assessed using frame net data from northeast South Dakota lakes; however, few individuals were captured by frame nets in Round Lake (Table 1). Black Bullheads were the most abundant species in the gill net catch (Table 1). Mean CPUE values were 1.8 and 154.5 for frame nets and gill nets, respectively (Table 1).

Gill net captured Black Bullhead ranged in TL from 13 to 27 cm (5.1 to 10.6 in) with the majority being  $\leq$  quality-length (230 mm; 9 in; Figure 3). The PSD was 6 and the PSD-P was 0 (Table 1; Figure 3). No age and growth information was collected. Black Bullheads in the gill net catch had mean  $W_r$  values that ranged from 88-103 for all length categories (e.g., stock to quality) sampled. A decreasing trend in condition was apparent as TL increased.

Other: Golden shiner and white sucker were other fish species captured during the 2013 fish community survey (Table 1).

### **Management Recommendations**

- 1) Conduct fish community surveys utilizing gill nets and frame nets on an every fourth year basis (next survey scheduled in summer 2017) to monitor fish relative abundance, fish population size structures, fish growth, and stocking success.
- 2) Continue to manage as a self-sustaining northern pike and yellow perch fishery.
- 3) Monitor winter and summer kill events. In cases of substantial winter/summer kill stock with northern pike and yellow perch to re-establish a fish community.

Table 1. Mean catch rate (CPUE; catch/net night) of stock-length fish, proportional size distribution of quality- (PSD) and preferred-length fish (PSD-P), and mean relative weight (Wr) of stock-length fish for various fish species captured in frame nets and experimental gill nets from Round Lake, 2013. Confidence intervals include 80 percent ( $\pm$  CI-80) or 90 percent ( $\pm$  CI-90). BLB= Black Bullhead; GOS= Golden Shiner; NOP= Northern Pike; WHS= White Sucker; YEP= Yellow Perch

Species	Abundance		Stock Density Indices				Condition	
	CPUE	CI-80	PSD	CI-90	PSD-P	CI-90	Wr	CI-90
<i>Frame nets</i>								
BLB	1.8	0.4	14	28	0	---	80	5
NOP	2.0	1.2	50	36	0	---	65	4
WHS	0.3	0.4	100	---	100	---	95	---
<i>Gill nets</i>								
BLB	154.5	106.2	6	2	0	---	92	1
GOS <sup>1</sup>	3.0	6.2	---	---	---	---	---	---
NOP	4.5	4.6	33	31	0	---	75	5
WHS	12.5	4.6	100	0	96	7	108	2
YEP	0.5	1.5	0	---	0	---	102	---

<sup>1</sup> All fish sizes

Table 2. Stocking history including size and number for fishes stocked into Round Lake, 2001-2013. WAE= walleye

Year	Species	Size	Number
2008	WAE	fry	200,000
2010	WAE	fry	200,000
2012	WAE	fry	100,000
2013	WAE	fry	100,000

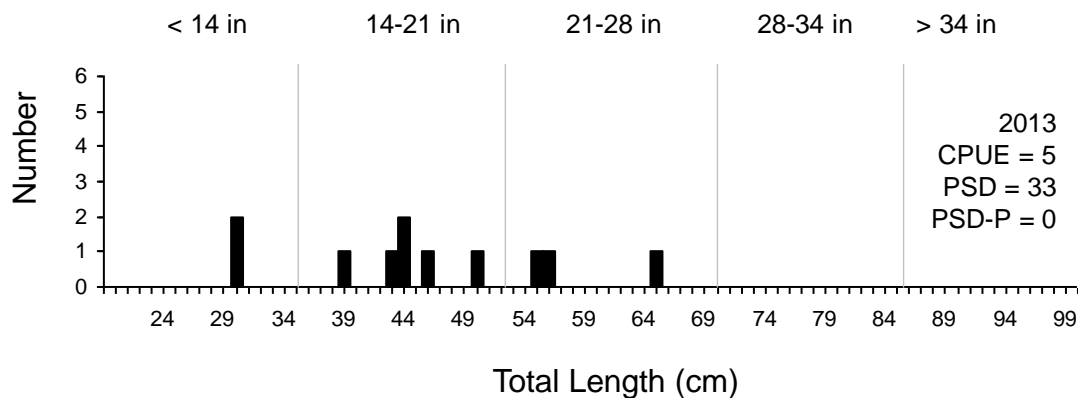


Figure 2. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for northern pike captured using gill nets in Round Lake, 2013.

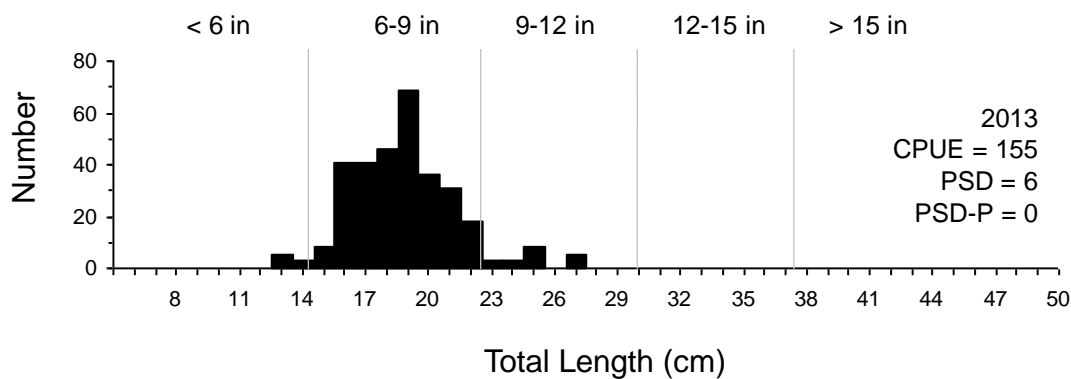


Figure 3. Length-frequency histogram, catch rate of stock-length fish (CPUE), proportional size distribution of quality- (PSD) and preferred-length (PSD-P) fish for Black Bullhead captured using gill nets in Round Lake, 2013.